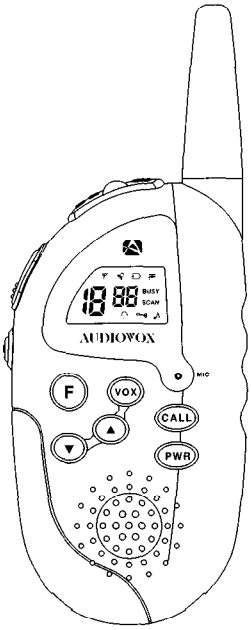
AUDIOVOX
ELECTRONICS CORP.

Owner's Manual
Model FR-541
Two Way Family Radio



Customer Service
1-800-290-6650

CONGRATULATIONS ON YOUR SELECTION OF THE FR-541 (FAMILY RADIO)

It is one of the most sophisticated and reliable two way family radios available.

BEFORE OPERATING YOUR FR-541 (FAMILY RADIO) **READ THIS MANUAL CAREFULLY**

⚠ CAUTIONS

NEVER ATTEMPT TO CHARGE ALKALINE OR DRY CELL BATTERIES, AS BATTERIES MAY BURST CAUSING PERSONAL INJURY AND DAMAGE TO THE PRODUCT. WHEN RECHARGING NICKEL METAL HYDRIDE (Ni-MH) BATTERIES WITH THE AUDIOVOX CHARGER, USE ONLY AUDIOVOX APPROVED RECHARGEABLE BATTERIES. USE OF THE AUDIOVOX CHARGER WITH OTHER BRANDS OF BATTERIES IS NOT RECOMMENDED, AS BATTERY CHARGING TIMES WILL VARY WITH DIFFERENT BRANDS. REFER TO THE MANUFACTURER'S INSTRUCTIONS FOR CHARGING OTHER BRANDS OF BATTERIES.

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FEATURES

Your FR-541 Family Radio is a portable, easy to use, two-way radio that you can carry almost anywhere. It is skillfully constructed to give you reliable communications for many different applications. The FR-541 is ideal for use around the house, in your boat, on hunting and camping trips, on the ski slopes or at the mall.

PERFORMANCE

Your transceiver will achieve its maximum operating range when communicating with other transceivers in a flat open area with no trees or buildings obstructing its signal. Range may be up to two miles under such conditions. Obstacles such as buildings, trees or mountains will tend to reduce the transceiver's effective range.

FCC WARNING

Replacement or substitution of transistors, diodes or other parts of a unique nature, with parts other than those recommended by the manufacturer, may cause a violation of the technical regulations of Part 15 of FCC Rules.

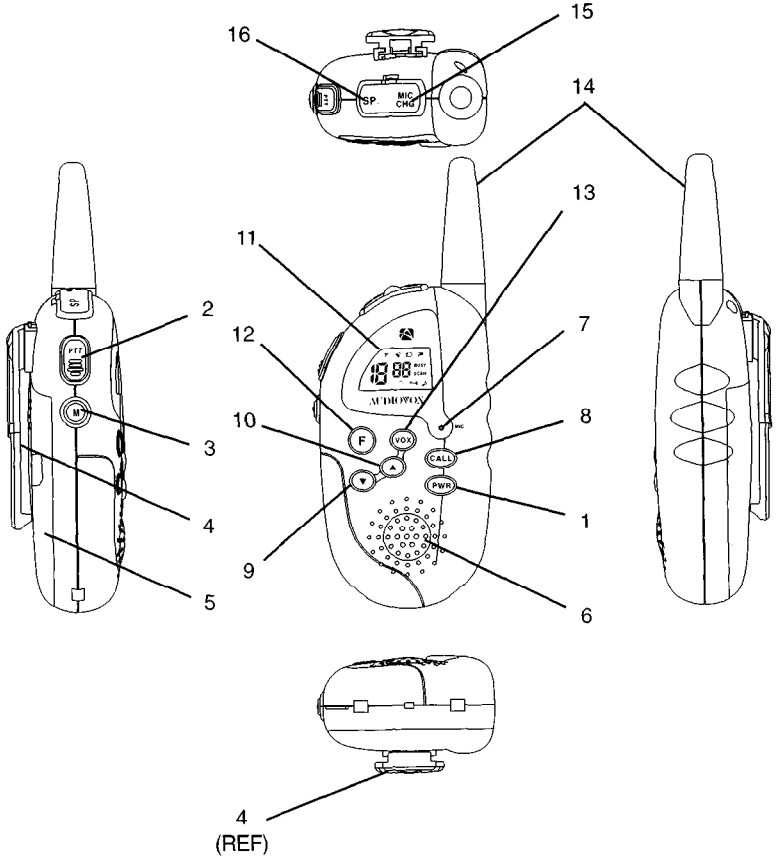
SAFETY INFORMATION

Your wireless hand-held portable transceiver contains a low power transmitter. When the PTT button is pushed it sends out radio frequency (RF) signals. The device is authorized to operate at a duty factor not to exceed 50%. In August 1996, the Federal Communications Commissions (FCC) adopted RF exposure guidelines with safety levels for hand-held wireless devices.

Important: To maintain compliance with the FCC' s RF exposure guidelines hold the transmitter at least 2 inch (5 centimeters) from your face and speak in a normal voice, with the antenna pointed up and away. If you wear the handset on your body while using the headset accessory, use only the Audiovox supplied belt clip for this product and ensure that the antenna is at least 2 inch (5 centimeters) from your body when transmitting. Use only the supplied antenna. Unauthorized antennas, modifications, or attachments could damage the transmitter and may violate FCC regulations.

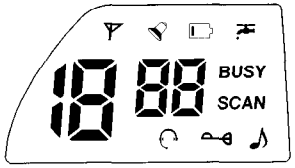
Normal Position: Hold the transmitter approximately 2" from your face and speak in a normal voice, with the antenna pointed up and away.

FUNCTION AND LOCATION OF THE CONTROLS



1. **Power Button:** Press and hold this button for 2 seconds to turn the transceiver on or off.
2. **Push-to-Talk Button (PTT):** Press to transmit. Release to receive.
3. **Monitor Button:** Press and hold to bypass the squelch and listen to channel activity; a momentary press activates LCD backlighting for 5 seconds.
4. **Clip**
5. **Battery Compartment:** Accepts 4 "AAA" batteries.
6. **Speaker**
7. **Microphone (MIC)**
8. **Call Button:** Press this button to send a ringing sound to other radios tuned to the same channel.
9. **Down Button:** Press this button to decrease the volume or channel setting as well as adjustment of other functions.
10. **Up Button:** Press this button to increase the volume or channel setting.
11. **LCD Display:** Displays the current FRS channel number as well as other functions as well as adjustment of other functions.
12. **Function Select Button:** Press this button to select and toggle through all unit functions.
13. **VOX Button:** Press this button to activate the Voice-Operated Transmission function.
14. **Fixed Antenna**
15. **Microphone/Charger Jack:** For use with an optional external microphone button and optional battery charger.
16. **Speaker Jack:** For use with an optional Audiovox approved optional speaker accessory.

LCD DISPLAY AND OPERATION



The FR-541 is equipped with an LCD display to indicate its settings and functions. When the radio is on, pressing the monitor button will illuminate the display for 5 seconds.

	Transmission Indicator
	Call Button Indicator
	Low Battery Alert
	Battery Saver Mode Indicator
	Beep tone Indicator
18	FRS Channel Indicator (1–14). 18 appears each time power is turned on during a power-on self-test of the unit.
88	CTCSS Channel Indicator (1-38). 88 appears each time power is turned on during a power-on self-test of the unit.
BUSY	Busy Channel Indicator. Displays when Monitor button is pressed.
SCAN	SCAN Indicator
	Key Lock Indicator
	VOX Function Indicator

Powering the unit:

Your radio transceiver operates on four AAA batteries. Alkaline batteries will provide slightly better performance than rechargeable batteries. Only Audiovox approved rechargeable batteries can be recharged in the radio transceiver using the optional charger. This will ensure optimum performance for your radio. Use of the Audiovox charger with other brands of batteries is not recommended as battery charging times will vary. Refer to the manufacturerer's instructions for charging other brands of batteries.

Batteries

There are three methods of powering the unit:

1. Alkaline Batteries.
   WARNING: Do not attempt to recharge Alkaline batteries.
2. Audiovox Rechargeable Ni-MH Batteries - (Rechargeable Ni-MH batteries and Charging Stand not included). Use only Audiovox approved rechargeable batteries and charger when charging batteries internal to the unit.
   NOTE: To extend battery life, avoid overcharging the batteries.
3. Various Brands of Rechargeable Batteries - Use of the Audiovox charger with other brands of rechargeable batteries is not recommended, as battery charging times will vary with different brands of batteries. Refer to the manufacturers's instructions for charging other brands of batteries.

The following guidelines will improve performance and provide longer operating times for your radio:

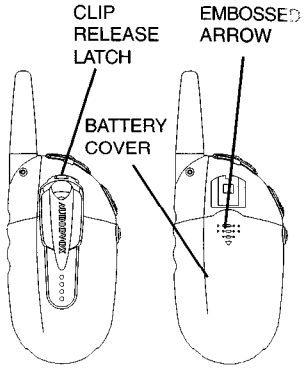
Do not mix old and new batteries.

The use of alkaline-type batteries is recommended to provide the longest operating time.

3. Do not mix alkaline, standard (carbon-zinc) or rechargeable batteries.
4. If the unit is not to be used for an extended period of time, remove the batteries. Old or leaking batteries can cause damage to the unit and will void the warranty.

BATTERY INSTALLATION

Your FR-541 requires four AAA alkaline or four rechargeable AAA cells. Alkaline batteries will provide the best performance from your transceiver. Remove the battery cover by releasing the clip latch at the top, and sliding the clip up and away from the back of the unit. Slide the battery cover downward while applying pressure at the embossed arrow. Observe the polarity symbols inside the battery tray when installing the batteries.



BATTERY SAVER MODE

Your FR-541 has a unique circuit designed to dramatically extend the life of its batteries. After 5 seconds of inactivity, the FR-541 will switch to battery saver mode. While in battery saver mode, the battery saver mode indicator ( ) is present on the display, and the transceiver will remain ready to receive any incoming transmissions while the battery saver mode is active. Pressing any of the buttons, except the up, down, Function (F) or VOX button will exit the battery saver mode.

USING YOUR FR-541

Turning the Transceiver On and Off

Pressing the power button (1) for 2 seconds will activate the unit. The speaker will sound a beep tone to confirm the transceiver's activation. In addition, the transceiver will perform a 1-second power-on self-test, whereby the LCD display will show all functional items, including a test of both the 2-digit channel display ( ) and the CTCSS channel display ( ). To turn the unit off, simply press and hold the power button for 2 seconds. The unit will confirm its shutdown with a single beep tone.

Volume Level

Audio reception volume is controlled by the Up (▲10) and the Down (▼9) button. Momentarily pressing either button will raise or lower the volume level in steps as shown by **1** through **8** on the display. Pressing and holding either button will adjust rapidly.

Call Button (8)

When the call button is pressed, the call icon ( ) will appear on the display and the FR-541 will transmit a 2-second ringing sound to other transceiver's tuned to the same channel. This feature can be used to signal other parties that voice communication is desired.

Low Battery Alert

When the batteries are in need of replacement or charging, the low battery icon ( ) will appear on the LCD display and the transceiver will sound a tone to alert the user.

Monitor Button

You can monitor channel activity by pressing the Monitor (M) button (3). If pressed and held for more than 2 seconds, you can continuously monitor channel activity. Press again, momentarily, and monitoring is disabled. Pressing this button momentarily will cause the unit to beep and the LCD backlight function will be activated for 5 seconds.

FUNCTIONS

Function (F) Select Button (12)
Pressing this button will allow selection of frequency channels as well as selection of the various unit functions. Each press permits selection of the desired channel (1–14), Continuous Tone Coded Squelch System (CTCSS), beep tone, scan, and Dual Watch mode. This button also activates the Key lock feature when pressed and held for more than 2 seconds. The Key lock icon ( ) appears on the display. To unlock this function, press and hold the function button for 2 seconds.

Channel Selection
Press function button once or until large two-digit channel display flashes. Press Up or Down buttons (10, 9) to select desired channel (1–14). Press the monitor button again to confirm and fix channel selection.

CTCSS Mode (Sub-Channel) Selection
The CTCSS provides 38 Sub-Frequencies to allow you to utilize the coded squelch tones (00–38). In order to communicate with another party on the same main channel and the same subcode must be used. This filters out unwanted transmissions without the same coded squelch tone. Since there are 38 CTCSS Subchannels for each main channel, a different subcode may be selected for each of the 14 channels.

To change the CTCSS Sub-channel,

- Press the Function (F) button twice or until the sub-channel number to the right of the main channel number begins flashing.
- Then press the Up or Down button to select the desired sub-channel for use.
- Press the monitor button momentarily to confirm selection.

The CTCSS mode can be turned off by accessing the flashing subchannel number CTCSS icon and using the Up or Down button to select **00** as the tone code frequency; then press monitor again.

NOTE: To communicate with other FRS units, they must be switched to the same channel and CTCSS subcode. To communicate with other FRS units that do not have subcodes, switch your unit to the same channel with the subcode set to **00**.

The CTCSS subcodes do not prevent others from hearing your transmission. This will only allow you to ignore all traffic on a given channel not using the same subcode.

Beep Confirmation/ "Roger Beep" Tones
Whenever the Up/Down or function select buttons are pressed, the speaker will sound a beep tone to confirm each press, provided the key tone feature is enabled. This also controls the "Roger Beep" function. This is a tone which is automatically transmitted whenever the PTT button is released. This alerts the receiving party that your transmission has been ended intentionally. Press the function (F) button three times to access the beep tone feature. To disable the key tone:

- Press the F button until the Beep Tone icon ( ) flashes; **On** appears on the display.
- Then press Up or Down buttons until **OF** appears and icon disappears. No beep tones should be heard.

To enable the key tone, proceed as before, until **OF** appears and Beep Tone icon flashes. Then press Up or Down button so that **On** appears. Key tone icon is steady and beep tone is heard.

Channel Scanning
Press function button four times until the **SCAN** icon flashes; **OF** will also appear on the display. Press the Up or Down button to enable the Scan function; **On** will appear, but the **SCAN** icon will still flash.

- While the **SCAN** icon is flashing, press the CALL button; channel scan will commence in the upward direction and then repeat. If and active channel is encountered, scan will pause on the active channel for 5 seconds, and then proceed to the next higher channel.
- To interrupt scan, press the CALL button; the **SCAN** icon will again flash. A call tone will be sent on the primary channel of the unit. The unit will remain on this channel for 15 seconds and scanning will resume.

- To resume scan in the upward direction, press the Up button; to reverse scan to the down direction, press the Down button.

The unit will scan channels 1–14 for activity. Scanning will continue until the Function (12) button is pressed.

NOTE: When the transceiver is turned off while in scan mode, the scan mode will still be active when the radio is again turned on.

Dual Watch Mode

This feature allows monitoring of two channels simultaneously. Press the function button five times or until **0**, or another channel number, appears in the channel number display and both the Antenna icon and Call icon flash. Using the Up/Down (▲▼) buttons, choose the alternate channel number you wish to monitor for activity. Press the function button to enter your selection. The channel display will now flash showing your current channel and alternate channel selection. To disable Dual Watch mode, press the function button to enter Dual Watch mode, and using the Up/Down (▲▼) buttons, select **0** as a new channel number.

When in Dual Watch mode, the unit will always transmit on the primary channel except when the secondary channel receives a transmission signal. To communicate with someone on the secondary channel, you must change the primary channel number.

Key Lock

This feature prevents accidental change of unit settings. While enabled, Key Lock allows only the PTT button to operate.

To enable Key Lock, press function button for more than 3 seconds until Key Lock icon appears. To disable the Key Lock function, press function button for more than 3 seconds until Key Lock icon disappears.

VOX Function

This feature enables you to have hands-free conversation. When using the internal microphone/speaker or external microphone/headset (**purchased separately**), your voice or the signal is detected and the radio transmits and receives automatically.

To access the VOX function, press the VOX button; the VOX icon ( ) appears on the display. In the VOX mode, the sensitivity is automatically set. To exit the VOX mode, press the VOX button again; the VOX icon will disappear from the display.

To Transmit

1. Set the desired primary channel.
2. Press and hold the PTT (Push-to-Talk) button while speaking slowly and clearly in a normal voice, approximately 2 to 3 inches from the microphone.
3. The transmit icon ( ) will illuminate while transmitting.
4. Release the PTT (Push-to-Talk) button when you finish speaking to receive incoming signals. If enabled a "Roger Beep" tone will be heard on the receiving unit to indicate end of transmission.

To Receive.

1. Set the desired channel.
2. Adjust the volume control to the desired listening volume by using the up and down buttons.
3. The transceiver will play strong received signals through its internal speaker or through a n external speaker, if so equipped.

Monitor Function

The monitor button can be used to play all signals present on a channel. This is useful when communicating with other parties at extreme range.

The monitor function can be locked on by pressing the Monitor button for more than 2 seconds. When the monitor lock has been activated, the LCD display will indicate **BUSY** and a tone will sound. Pressing the monitor button a second time unlock the monitor function.

WARNING

- Remove the batteries from the transceiver if it is not expected to be used for long periods. This will eliminate the possibility of battery acid leaking from the batteries and corroding the transceiver.

- Avoid exposing the unit to water or extremes of temperature.
- Do not use this device in or near a mining facility, which uses remotely triggered explosives or in areas labeled "Blasting Area". Premature or accidental detonation may result.
- Do not attempt to modify or in any way increase the output of this transceiver. Its output is designed to meet the legal limits set by the FCC.
- Do not use this device or change its batteries in potentially explosive atmospheres as sparks in such areas could result in an explosion.
- Turn your transceiver off wherever posted notices restrict the use of radios or cellular telephones. Facilities such as hospitals may use equipment that is sensitive to RF energy.
- Turn your transceiver off on-board aircraft when requested to do so.
- Do not place your transceiver in front of a vehicle's air-bag. If the air-bag deploys, it could propel the transceiver like a projectile.
- This transceiver complies with F.C.C. regulations for use in the United States. Use in other countries may be prohibited or restricted by local regulation. Please check with the local regulating agency before using this device outside of the United States.

SPECIFICATIONS*

Channels:	14
Max Output Power:	500 mW ERP
Battery Life	
Alkaline:	30 - 35 Hours
Power Source:	6.0V DC,4"AAA" Batteries

* These specifications are subject to change without notice. They represent typical values; individual units may vary.

Channel Frequencies

Channel	MHz	Channel	MHz
1	462.5625	8	467.5625
2	462.5875	9	467.5875
3	462.6125	10	467.6125
4	462.6375	11	467.6375
5	462.6625	12	467.6625
6	462.6875	13	467.6875
7	462.7125	14	467.7125

Continuous Tone Coded Squelch System Tone Frequencies (in Hz)

CTCSS	Freq. Hz	CTCSS	Freq. Hz
1	67.0	20	131.8
2	71.9	21	136.5
3	74.4	22	141.3
4	77.0	23	146.2
5	79.7	24	151.4
6	82.5	25	156.7
7	85.4	26	162.2
8	88.5	27	167.9
9	91.5	28	173.8
10	94.8	29	179.9
11	97.4	30	186.2
12	100.0	31	192.8
13	103.5	32	203.5
14	107.2	33	210.7
15	110.9	34	218.1
16	114.8	35	225.7
17	118.8	36	233.6
18	123.0	37	241.8
19	127.3	38	250.3

90 DAY LIMITED WARRANTY

Applies to Audiovox Family Radio Service Products.

AUDIOVOX CORPORATION (the Company) warrants to the original retail purchaser of this product that should this product or any part thereof, under normal use and conditions, be proven defective in material or workmanship within 90 days from the date of original purchase, such defect(s) will be repaired or replaced with new or reconditioned product (at the Company's option) without charge for parts and repair labor.

To obtain repair or replacement within the terms of this Warranty, the product is to be delivered with proof of warranty coverage (e.g. dated bill of sale), specification of defect(s), transportation prepaid, to the warranty center at the address shown below.

The Company disclaims liability for communications range of this product.

This Warranty does not apply to any product or part thereof which, in the opinion of the Company, has suffered or been damaged through alteration, improper installation, mishandling, misuse, neglect, accident, or by removal or defacement of the factory serial number/bar code label(s). THE EXTENT OF THE COMPANY'S LIABILITY UNDER THIS WARRANTY IS LIMITED TO THE REPAIR OR REPLACEMENT PROVIDED ABOVE AND, IN NO EVENT, SHALL THE COMPANY'S LIABILITY EXCEED THE PURCHASE PRICE PAID BY PURCHASER FOR THE PRODUCT.

This Warranty is in lieu of all other express warranties or liabilities. ANY IMPLIED WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY, SHALL BE LIMITED TO THE DURATION OF THIS WRITTEN WARRANTY. ANY ACTION FOR BREACH OF ANY WARRANTY HEREUNDER INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY MUST BE BROUGHT WITHIN A PERIOD OF 30 MONTHS FROM DATE OF ORIGINAL PURCHASE. IN NO CASE SHALL THE COMPANY BE LIABLE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES FOR BREACH OF THIS OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, WHATSOEVER. No person or representative is authorized to assume for the Company any liability other than expressed herein in connection with the sale of this product.

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